

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE J	PAGE 1	OF 5	PAGES
2. AMENDMENT/MODIFICATION NO. 0002		3. EFFECTIVE DATE 03/21/01		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. <i>(If applicable)</i>
6. ISSUED BY USAF PROCUREMENT BRANCH/PKP 100 Kindel Drive, Suite A-332 Arnold AFB TN 37389-1332 Buyer: Rick Stewart		7. ADMINISTERED BY <i>(If other than Item 6)</i>		CODE		
8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i> All Prospective Offerors				(X) 9A. AMENDMENT OF SOLICITATION NO. F40650-00-R-0001 9B. DATED <i>(SEE ITEM 11)</i> 12/29/01 10A. MODIFICATION OF CONTRACT/ORDER NO. 10B. DATED <i>(SEE ITEM 13)</i>		
CODE		FACILITY CODE				

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting and Appropriation Data *(If required)*

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(X)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc)</i> . SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

See pages 2-5 for description of amendment.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>		16A. NAME AND TITLE OF SIGNER <i>(Type or print)</i> W. RICHARD STEWART	
15B. CONTRACTOR/OFFEROR <i>(Signature of person authorized to sign)</i>	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY <i>(Signature of Contracting Officer)</i>	16C. DATE SIGNED

Specification Revisions Listing

Revision 1, February 1, 2001: Paragraph 3.2.1.1b is amended to read,

“The power factor at the input to the power electronics sets, PE2 and PE3, shall not be less than 0.90 lagging during any start or operation. Measure the power factor at the primary of the 161-Kv transformers supplying the replacement PWT MD Starting System.”

in lieu of :

“The power factor at the input to the power electronics sets, PE2 and PE3, shall not be less than 0.95 lagging or leading during any start or operation. Measure the power factor at the secondary of the 161-Kv transformers supplying the replacement PWT MD Starting System.”

Revision 2, March 23, 2001: Add paragraph 2.2.1.8 that reads,

2.2.1.8 American Petroleum Institute (API):

API 670, Third Edition, November 1993 Vibration, Axial Position, and Bearing Temperature
Monitoring Systems

Paragraph 3.1.2.1a 4) is amended to read,

Thrust Bearing Function: thrust bearing capability for the PWT MD drivetrain is incorporated in the existing M2 and M3 starting motors. The thrust bearing in each starting motor is capable of continuous operation under the residual thrust not taken by either the 16T or the 16S Compressor thrust bearings.

in lieu of :

Thrust Bearing Function: thrust bearing capability for the PWT MD drivetrain is incorporated in the existing M2 and M3 starting motors. The thrust bearing in each starting motor is capable of continuous operation under the thrust imposed by either the 16T or the 16S Compressor.

Paragraph 3.1.3 is amended to read,

Major Component List of Existing Government-owned Equipment: The Contractor shall not apply any existing equipment designated as available for use outside of its nameplate rating(s) without supporting analysis and/or documentation that provides justification for such application. The Contractor shall assume ownership of all equipment and materials removed or replaced. The Contractor shall be responsible for removal of all equipment and materials removed or replaced from AEDC. The Government will handle properly containerized hazardous waste.

in lieu of :

Major Component List of Existing Government-owned Equipment: The Contractor shall not apply any existing equipment designated as available for use outside of its nameplate rating(s) without supporting analysis and/or documentation that provides justification for such application. The Contractor shall assume ownership of all equipment and materials removed or replaced. The

Contractor shall be responsible for removal of all equipment and materials removed or replaced from AEDC.

Add paragraph 3.2.1.1f that reads,

- f. Provide a system that will limit energy flows during fault and transient conditions to allow operation of the new motors on the foundations for the existing wound motors. Appendix B, Section 7.2 lists interface drawings for the motor foundations and the PWT MD motor drive units.

Paragraph 3.2.1.2e is amended to read,

- e. Prior to starting, the 16T compressor is at atmospheric pressure (2,160-lb./ft²) with its stator blades adjusted for minimum load.
 - 1) Minimum load for the 16T Compressor is 32.3-MW at 600-RPM with a pressure of 800-lb/ft².
 - 2) For starting 16T, the PES (Plenum Evacuation System) pumps down — reduces the pressure — in the compressor as the drive train accelerates, so as to achieve a final pressure equal to 800-lb/ft².

in lieu of :

- e. Prior to starting, the 16T compressor is at atmospheric pressure with its stator blades adjusted for minimum load.
 - 1) Minimum load for the 16T Compressor is 86.8 MW at 600-RPM.
 - 2) For starting 16T, the PES (Plenum Evacuation System) pumps down — reduces the pressure — in the compressor as the drive train accelerates, so as to achieve a final pressure equal to that required for the first test condition.

Paragraph 3.2.1.2f is amended to read,

- f. Prior to starting the 16S Compressor, its stator blades are adjusted for minimum load. The PES reduces the pressure in the 16S compressor to 400- lb/ft² prior to starting, and maintains that pressure during acceleration. Minimum load for the 16S Compressor is 55.6-MW at 600-RPM with a pressure of 400- lb/ft².

in lieu of :

- f. Prior to starting the 16S Compressor, its stator blades are adjusted for minimum load. The PES reduces the pressure in the 16S compressor to 200-psfa prior to starting, and maintains that pressure during acceleration. Minimum load for the 16S Compressor is 56-MW at 600-RPM.

Paragraph 3.2.1.4 is amended to read,

System Design Life: Provide a replacement PWT MD Starting System, including mounting hardware for the new motors, with a design life of not less than twenty-five (25) years, for operation averaging two hundred (200) days per year. That design life does not apply to existing Government-provided equipment available for use in the system. Include in the determination of the system design life consideration of the effects of mechanically and electrically induced harmonic vibrations on all system components. The design life duty cycle is five (5) starts and stops per hour, with a rest period of not less than five minutes between successive starts, and with twenty (20) starts and stops per day. Include in the system life analysis:

in lieu of :

System Design Life: Provide a replacement PWT MD Starting System, including the foundations and mounting hardware for the new motors, with a design life of not less than twenty-five (25) years, for operation averaging two hundred (200) days per year. That design life does not apply to existing Government-provided equipment available for use in the system. Include in the determination of the system design life consideration of the effects of mechanically and electrically induced harmonic vibrations on all system components. The design life duty cycle is five (5) starts and stops per hour, with a rest period of not less than five minutes between successive starts, and with twenty (20) starts and stops per day. Include in the system life analysis:

Paragraph 3.2.1.5 is amended to read,

System Reliability: All system reliability requirements apply to new and renovated equipment, not to Government equipment designated as available for use by the Contractor. Provide a replacement PWT MD Starting System with not less than the following system reliability:

in lieu of :

System Reliability: All system reliability requirements apply to new and renovated equipment, not to Government equipment designated as available for use by the Contractor. The reliability requirements do apply to the motor foundations and mounting hardware. Provide a replacement PWT MD Starting System with not less than the following system reliability:

Paragraph 3.2.1.6a is amended to read,

Rated for constant speed operation at 600-RPM with:

in lieu of :

Rated for constant speed operation at 600-RPM from a 13.8-Kv, 60-Hz utility line, in tandem with the existing 83,000-HP synchronous motors of PWT MD, with:

Paragraph 3.2.1.6c is amended to read,

- c. With an efficiency, including the losses in the motor and power electronics set, not less than:
 - 1) 94% operating at 600-RPM, 60,000-HP minimum, 65,000-HP maximum.
 - 2) 92% operating at 600-RPM, S.F. 1.15 (69,000-HP minimum, 74,750-HP maximum).
 - 3) 91% operating over the speed range from 380-RPM to 530-RPM at constant torque, with the same torque as the condition in 3.2.1.6c 1) as the 100% torque point.

in lieu of :

- c. With an efficiency, including the losses in the motor and power electronics set, not less than:
 - 1) 97% operating at 600-RPM, 60,000-HP minimum, 65,000-HP maximum.
 - 2) 96% operating at 600-RPM, S.F. 1.15 (69,000-HP minimum, 74,750-HP maximum).
 - 3) 95% operating over the speed range of 60-RPM up to 600-RPM.

Paragraph 3.2.1.8f is amended to read,

Provide each power electronics set with a means for isolation of each individual component from any energy source, including sources of stored energy, to allow safe personnel access.

in lieu of :

Provide each power electronics set with a means for electrical disconnection from the secondary side of its input power transformer(s) to allow isolation for safe personnel access.

Paragraph 3.2.2.1 is amended to read,

Space limitation: All new equipment shall fit within the outdoor area in the immediate vicinity of PWT MD and within Building 780 as indicated on the contract drawings (see Appendix B), with sufficient clearance space for maintenance and code compliance. The Contractor shall be responsible for verifying clearances and other limitations that can reasonably be verified observations, dimensional checks, and field testing. The Contractor shall be responsible for installing the replacement PWT MD Starting System taking into consideration all relevant restrictions. The Contractor shall provide:

in lieu of :

Space limitation: All new equipment shall fit within the outdoor area in the immediate vicinity of PWT MD and within Building 780 as indicated on the contract drawings (see Appendix B), with sufficient clearance space for maintenance and code compliance. The Contractor shall be responsible for verifying clearances and other limitations and installing the replacement PWT MD Starting System taking into consideration all relevant restrictions. The Contractor shall provide:

Add paragraph 3.4.4c that reads,

Provide power electronics sets capable of operating the system at constant torque over the speed range from 60-RPM to 600-RPM.

Add paragraph 3.4.10 that reads,

Provide the new synchronous motors M2' and M3' with probes to measure bearing vibration, axial position, and temperature in accordance with API 670-1993. Interface the probes to the existing machine condition monitoring system.